

From: [Chen, Isaac](#)
To: [Shaikh, Taimur](#)
Cc: cjmoreno@liskow.com
Subject: FW: Offshore OCS discharge of produced water under NPDES Permit
Date: Wednesday, September 17, 2014 3:28:00 PM
Attachments: [removed.txt](#)
[CORMIX SESSION REPORT.PDF](#)
[Rpt_14060719_14060719_2014_06_27_07_48_30_588_Final_v1.pdf](#)

Taim,

Would you please review the description in the email below and the attached CORMIX modelling report and let us discuss if you have any concerns. Thanks.

From: Carlos J. Moreno [mailto:cjmoreno@liskow.com]
Sent: Wednesday, September 17, 2014 2:36 PM
To: Chen, Isaac
Subject: FW: Offshore OCS discharge of produced water under NPDES Permit

Isaac,

I hope you are doing well. I wanted to confirm that you received the email below. Please let me know if you had a chance to review the information. If so, please let me know if you have any questions or concerns. Thanks again for your time.

Regards,

Carlos Moreno

(713) 651-2960 Direct
(713) 651-2908 Fax
(281) 414-4746 Cell



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From: Carlos J. Moreno
Sent: Wednesday, September 03, 2014 10:05 AM
To: 'chen.isaac@epa.gov'
Subject: Offshore OCS discharge of produced water under NPDES Permit

Mr. Chen,

It was a pleasure talking with you recently. As we discussed, I am assisting Petrobras as outside counsel and agreed to facilitate discussions with you related to their future discharge

of produced water from the FPSO located offshore on the OCS. Petrobras realizes and understands that EPA does not provide any kind of pre-authorization for GMG290000 permit compliance purposes and they do not seek such approval. Petrobras understands it is their responsibility to stay in compliance with this permit. Similarly, Petrobras understands that the permit allows them to proceed with their planned discharge without EPA approval as long as it is in compliance with all applicable permit requirements. Nonetheless, because Petrobras is using the only FPSO in the Gulf of Mexico, it would like to describe its decision-making efforts to remain in compliance with the permit once it starts discharging produced waters. It is providing this information to you in an effort to provide you with an opportunity to ask any questions, provide any comments and to allow Petrobras to address EPA concerns, if there are any, before the FPSO actually begins discharging the produced water into the Gulf in the near future.

General Description:

Petrobras currently collects and transports the FPSO's produced water to shore for disposal.

Before discharging the FPSO's produced water into the Gulf, Petrobras will mix seawater from its cooling water system with its produced waters at a point about 22 feet from where it is discharged into the Gulf. The daily quantity of produced water will be mixed with about 180,000 barrels per day ("bpd") of seawater from the FPSO's cooling process. To ensure that a representative sample is collected for toxicity monitoring and testing, the combined flow of seawater and produced water will be sampled in the discharge casing about 16 feet below the mixing point. (see attached picture of the FPSO's discharge point for seawater). If you want to review the sampling protocol to be followed, let me know and I will be glad to forward it to you.

The combined estimated discharge rate will exceed the 75,000 bpd maximum discharge rate contained in permit table 1-F of Appendix D. For this reason, Petrobras conducted CORMIX modeling to determine the proper critical dilution value. (See CORMIX model attachment). Then, Petrobras created and tested a mock sample of the combined discharge to verify that the actual discharge is expected to pass toxicity requirements at the applicable critical dilution value prescribed by CORMIX once the FPSO begins discharging the produced water into the Gulf. (See mock sample lab report attachment). Based upon the CORMIX modeling and subsequent testing, Petrobras believes its discharge of produced waters into the Gulf will comply with all permit requirements.

Please review these attachments to see if there is anything we may have missed based on your experience. We would be happy to discuss over the phone with you in the next few days. If you do not see a need to have a follow-up call, please let me know by email along with any concerns or comments you may have about Petrobras' planned discharge of produced waters into the Gulf.

Regards,

Carlos Moreno

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